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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,770	10/17/2001	George Steve Saloka	200-1264 KAV	4212
22844	7590	06/09/2004	EXAMINER	
FORD GLOBAL TECHNOLOGIES, LLC. SUITE 600 - PARKLANE TOWERS EAST ONE PARKLANE BLVD. DEARBORN, MI 48126			WINTER, GENTLE E	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,770

Applicant(s)

SALOKA ET AL.

Examiner

Gentle E. Winter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 012802.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I (claims 1-7) in Paper No. 032204 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Construction

2. Claims 4-7 are construed, in light of the specification, see specifically paragraph [0028], such that "operating attribute" is the same as the "measured vehicle operating attribute". If applicant contemplates a different construction applicant should make clear, on the record, what is contemplated.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by PGPub 2002/0039672 to Aramaki.

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3. Claim 1 is anticipated in the following manner. Both the claim and Aramaki disclose a system comprising: an air compressor (compressor 2); and a conduit system (bypass flow passage 7) which is communicatively coupled to, and receives compressed air from, said air compressor (compressor 2); and which is further communicatively coupled to said fuel cell (fuel cell 1). The claim further discloses that the conduit system is effective to selectively deliver said compressed air directly to said fuel cell during cold start conditions. The expression "selectively deliver...directly to said fuel cell" is construed as to mean that there are no functional elements acting on the air between the compressor and the fuel cell. By virtue of being compressed, the air would be warmed in an amount proportional to the work done on the air by the compressor. See also paragraphs [0021] and [0043] disclosing the same. The warmed air, upon delivery to the fuel cell, is effective heat said fuel cell. As to the limitation that the system be used in conjunction with a fuel cell in a vehicle, Aramaki discloses at [0003]: "The start-up motor is used for variably drive the compressor and is specifically suited for use in an automotive field."

4. As to claim 2, Aramaki and the claim both disclose that the system further includes a heat exchanger (heat exchanger 11) disposed within said conduit system and which is effective to selectively cool said compressed air ("...the heat exchanger 11 serves to lower the temperature of compressed air to a level not to cause the fuel cell 1 to be damaged." [0021]). Claim 2 and Aramaki both disclose a bypass valve (valves 8 and 9) which is operatively disposed within said conduit system and which is effective to selectively cause said compressed air to bypass ("...bypass flow passage 7." [0020]) said heat exchanger (heat exchanger 11) and to be delivered directly to said fuel cell (fuel cell 1) during cold start conditions, effective to heat said

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fuel cell. ("During the start-up operation at cold temperature, since compressed air is supplied to the fuel cell 1 while bypassing the air treatment units, such as the silencer 10 and the heat exchanger 11, which has a large heat capacity, the temperature of compressed air is immediately raised to a suitable level such that a power generation efficiency of the fuel cell 1 is satisfactorily increased." [0043])

5. As to claim 4 further limiting claim 2 and disclosing that there is at least one sensor ("temperature sensor 23 in an air supply conduit..." [0058]) effective to measure at least one operating attribute. Since the temperature sensor measures the air supply temperature, which is an operating attribute, the claim limitation is met. The sensor generates a signal representing said at least one measured vehicle operating attribute ("The temperature sensor 23 functions to monitor the temperature of compressed air to be supplied to the fuel cell 1 for producing a detection signal, indicative of a temperature T..." [0058]); and a controller which is communicatively coupled to said bypass valve and to said at least one sensor, said controller being effective to receive said signal and to selectively control said bypass valve based upon the value of said signal. ("When the temperature T is equal to or exceeds a "flow-passage change-over" temperature threshold value T2 in the controller 20, the controller 20 actuates the first and second change-over valves 8 and 9 such that the bypass flow passage 7 is changed over to the main air-flow passage 6 which allows compressed air, flowing from the compressor 2, to be supplied to the fuel cell 1.")

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6. With respect to claim 7, further limiting claim 4 disclosing that the monitored value is the temperature of the compressed gas, the same is disclosed in paragraph [0058]: "Further, in the fourth embodiment, the parameters, by which the "flow-passage change-over" timings are determined, may further include, in addition to the temperature T of compressed air...and a suitable combination of these parameters."

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over PGPub 2003/0049504 to Wheat et al. "Wheat"

3. Aramaki discloses the claimed invention except for the temperature sensor sampling the ambient temperature and temperature of the fuel cell. Wheat teaches that it is known to measure the temperature of the fuel cell and the ambient air. See specifically paragraph [0016] "In yet other features of the invention, an ambient temperature sensor generates an ambient temperature signal. Additionally, paragraph [0015] discloses: "A stack temperature sensor is connected to the controller and generates a stack temperature signal."

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4. It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a fuel cell and ambient air sensor as taught by Wheat, since Wheat states at paragraph [0037] "...the fuel cell controller 160 measures internal stack temperature, the ambient temperature...and determines whether heating is necessary. ... prevent damage due to freezing."

Allowable Subject Matter

5. The following is a statement of reasons for the indication of allowable subject matter:

6. With respect to claim 3, the prior art of record apparently fails to contemplate a system that relies on the incoming air to preheat the hydrogen, rather the prior art apparently relies on the exhaust stream to preheat the fuel stream. Since, in general, the thermal gradient and the concomitant driving force will be larger when using the exhaust stream, the artisan would not have been motivated to use the lower thermal gradient reactant in lieu of the exhaust.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (571) 272-1310. The examiner can normally be reached on Monday-Friday 7:00-3:30.

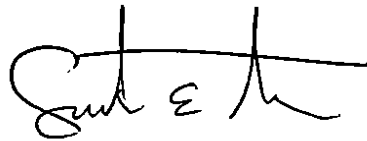
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gentle E. Winter
Examiner
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June 8, 2004

A handwritten signature in black ink, appearing to read "Gentle E. Winter", with a stylized flourish at the end.